

What is claimed is:

1 1. A locking spacer assembly for filling a void in a turbine component slot
2 having lateral recesses, said locking spacer assembly comprising:
3 first and second end supports, said first and second end supports each having
4 an outer face and an opposing inner face, each outer face having an outwardly
5 stepped profile, whereby said first and second end supports are adapted to insert in
6 a turbine component slot having lateral recesses and to project into the lateral
7 recesses, said inner faces facing toward each other and spaced apart; and
8 a filler assembly disposed between the inner faces of the first and second end
9 supports, said filler assembly including first and second outer fillers and a central
10 filler, each of the inner faces having an inset, said first outer filler having a projection
11 extending into the inset of one of the inner faces and the second outer filler having
12 projection extending into the inset of the other inner face, said central filler being
13 disposed between the first and second outer fillers.

1 2. The assembly of claim 1 wherein each outer face extends from an
2 upper end to a lower end, and the stepped profile of each outer face includes a lower
3 projection adjacent said lower end.

1 3. The assembly of claim 2 wherein the stepped profile further includes an
2 upper projection adjacent said upper end.

1 4. The assembly of claim 3 wherein the upper projection is tapered.

1 5. The assembly of claim 1 wherein each inner face inset substantially
2 mates with a respective one of the outer filler projections.

1 6. The assembly of claim 5 wherein each outer filler projection includes a
2 step and each inner face inset is a stepped recess for matingly receiving a
3 respective one of said steps.

1 7. The assembly of claim 5 wherein each outer filler projection includes a
2 series of filler teeth and each inner face inset includes a series of inner face teeth for
3 matingly engaging a respective one of the series of filler teeth.

1 8. The assembly of claim 7 wherein each of the filler teeth and inner face
2 teeth has a sawtooth profile.

1 9. The assembly of claim 1 further comprising a retainer having a curved
2 retainer base, each of said first and second end supports, said first and second outer
3 fillers and said central filler having a cutout for collectively receiving the curved
4 retainer base.

1 10. The assembly of claim 9 wherein the curved retainer base has a
2 concave top and the retainer includes a retainer web at least partially spanning the
3 concave top and wherein at least the respective cutouts of said first and second
4 outer fillers and said central filler collectively receive the retainer web.

1 11. The assembly of claim 10 wherein the respective cutouts of the first
2 and second end supports collectively receive the retainer web.

1 12. The assembly of claim 9 wherein each of the respective cutouts is
2 provided in an upper surface of each of said first and second end supports, said first
3 and second outer fillers and said central filler.

1 13. A locking spacer assembly for filling a void in a turbine component slot
2 having lateral recesses, said locking spacer assembly comprising:
3 first and second end supports, said first and second end supports each having
4 an outward face and an opposing inner face, each outward face having an outwardly
5 stepped profile, whereby said first and second end supports are adapted to insert in
6 a turbine component slot having lateral recesses and to project into the lateral
7 recesses, said inner faces facing toward each other; and

8 a retainer having a curved retainer base, each of said first and second end
9 supports having a cutout for collectively receiving the curved retainer base.

1 14. The assembly of claim 13 further comprising at least one filler disposed
2 between said inner faces, said filler providing a cutout for receiving, collectively with
3 the cutouts of the first and second end supports, the curved retainer base.

1 15. The assembly of claim 14 wherein the curved retainer base has a
2 concave top and the retainer includes a retainer web at least partially spanning the
3 concave top and wherein at least the cutout of the filler receives the retainer web.

1 16. The assembly of claim 14 wherein the respective cutouts of the first
2 and second end supports receive, collectively with the cutout of the filler, the retainer
3 web.

1 17. A slotted turbine component with a locking spacer assembly for filling a
2 void in the turbine component slot comprising:

3 a turbine component having slot, said slot having a profile including a central
4 opening and at least one recess extending laterally from each side of the central
5 opening,

6 first and second end supports, said first and second end supports each having
7 an outward face and an opposing inner face, each outward face having a projection
8 extending into a respective one of the slot recesses, said inner faces facing toward
9 each other; and

10 a retainer having a curved retainer base, each of said first and second end
11 supports having a cutout for collectively receiving the curved retainer base.

12 a filler assembly disposed between the inner faces of the first and second end
13 supports, said filler assembly including first and second outer fillers and a central
14 filler, each of the inner faces having an inset, said first outer filler having a projection
15 extending into the inset of one of the inner faces and the second outer filler having a
16 projection extending into the inset of the other inner face, said central filler being
17 disposed between the first and second outer fillers.

1 18. The slotted turbine component with locking spacer assembly of claim
2 17 further comprising at least one filler disposed between said inner faces, said filler
3 providing a cutout for receiving, collectively with the cutouts of the first and second
4 end supports, the curved retainer base.

1 19. The assembly of claim 18 wherein the curved retainer base has a
2 concave top and the retainer includes a retainer web at least partially spanning the
3 concave top and wherein at least the cutout of the filler receives the retainer web.

1 20. The assembly of claim 19 wherein the respective cutouts of the first
2 and second end supports receive, collectively with the cutout of the filler, the retainer
3 web.